

# Not Sure What to Prefer When Facing Upcoming Rupture of Liver

Xiao-Wei Zhou<sup>1,2</sup>  
Yue Zhou<sup>1,2</sup>  
Zhong Jia<sup>1,2\*</sup>  
Jie Zhang<sup>1,2</sup>  
Chao-Jun Kong<sup>1,2</sup>

<sup>1</sup>Department of Hepatopancreatobiliary Surgery, Hangzhou First People's Hospital (Nanjing Medical University Affiliated Hangzhou Hospital), China  
<sup>2</sup>Zhejiang Chinese Medicine University Affiliated 4th Clinical Teaching Hospital, Hangzhou 310006, China

## Abstract

**Background:** Bleeding under hepatic capsule resulting from spontaneous rupture of hepatocellular carcinoma (HCC) is an uncommon episode in clinical practice, which may lead to the potential of lethal consequence. However, the fact not sure what to prefer to conduct when facing upcoming rupture of the liver true capsule.

**Objective:** Aims to identify the cause of tumor rupture and to judge the proper timing for surgery.

**Methods:** We described a 53-year-old man, who was hospitalized with the misdiagnosis of acute cholecystitis and gallstone, which accurately was triggered by occult bleeding of a nodular regenerative hyperplasia under hepatic capsule closer to the gallbladder. He experienced a series of urgent rescue measures (cardiopulmonary cerebral resuscitation (CPCR), transcatheter arterial embolization (TAE) and laparotomy in turn).

**Results:** Unfortunately, he died of liver failure, kidney failure and cerebral hemorrhage.

**Conclusion:** Herb may induce tumor necrosis or bleeding. The proper time for surgery and the optimized strategy in this case are of crucial importance to save one's life.

## Keywords

Bleeding under liver capsula, Hepatocellular carcinoma, Time for surgery

## Introduction

Hepatic nodules including nodular regenerative hyperplasia and HCC have been recognized as a result of qi stagnation and blood stasis in the notion of Chinese Tradition Medicine (CTM). The major Chinese prefer to take herbs to resolve the mass if the mass is in a supervision status. Although herbs are effective and safe to use, they may lead to mass necrosis or bleeding under liver capsule on very few occasion. The true hepatic capsule rupture is uncertain, and also difficult to predict in advance, which may push the patient into a risk of life-threatening. However, what time for surgery in this case seldom discussed before. Herein, we would like to describe a successful initial rescue but worthy rethought on later therapeutic strategy for a special patient with unexpected rupture of a liver mass, aiming to unveil the feature of upcoming rupture of the liver true capsule.

## Case Report

A 53-year-old male transferred to the emergency room by 120 ampullary because of acute persistent right upper quadrant abdominal dull-like pain. He had a history of gallstones, hepatitis B-related cirrhosis about the 20-year history and a middle hepatic nodule with a size of nearly 4cm in diameter was found by ultrasonography examination, in treatment with herbs (no detailed precipitation for herbs provided). On physical examination, the patient looked pale and sweaty with a very low temperature of 35.8°C, blood pressure 106/80mmHg, heart rate 105 beats/minute. The abdomen was slightly distended with tenderness in right upper quadrant, Murphy syndrome (+). The hematocrit was 43.2% (normal range 36~54 %), hemoglobin (Hb) 13.5g/dl, leukocyte 19.7\*10<sup>9</sup>, neutrophil 88.3%, platelets 961,000/mm<sup>3</sup>, the other laboratory tests (total bilirubin, albumin, creatinine, prothrombin time and previous AFP etc.) at that moment were all normal. Ultrasonography revealed gallstones and acute cholecystitis with very few free fluid under liver capsule closer to the gallbladder. Computed tomography (CT) scan of the abdomen showed gallstone combined with acute cholecystitis, low-density focus located at the surface of hepatic segment V with corpuscular fluid under the hepatic capsule. Routine papillary drugs for acute abdominal pain were administrated. About two and a half hours later, the patient felt serious discomfort of unbearable distension in the right upper quadrant abdomen, and his general conditions went worse. Urgent abdominal X-ray showed no specific findings except for a few high-density gallstones. Amazingly, blood pressure and heart rate declined sharply and the patient lost his consciousness accordingly. Urgent CPCR was performed successfully through 40; minute rescue. He was transferred to the intensive

## Article Information

**DOI:** 10.31021/jcro.20181105  
**Article Type:** Case Report  
**Journal Type:** Open Access  
**Volume:** 1 **Issue:** 1  
**Manuscript ID:** JCRO-1-105  
**Publisher:** Boffin Access Limited.  
**Received Date:** November 01, 2017  
**Accepted Date:** December 04, 2017  
**Published Date:** January 15, 2018

## \*Corresponding author:

Zhong Jia

Department of Hepatopancreatobiliary Surgery  
Hangzhou First People's Hospital  
(Nanjing Medical University Affiliated Hangzhou Hospital), China  
Tel: +86-13958114181  
Fax: +86-0571-87914773  
E-mail: jiazhong20058@hotmail.com

**Citation:** Zhou XW, Zhou Y, Jia Z, Zhang J, Kong CJ. Not Sure What to Prefer When Facing Upcoming Rupture of Liver Tumor. J Cancer Res Oncobiol. 2018 Jan; 1(1): 105

**Copyright:** © 2018 Zhou XW et al. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 international License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

care unit (ICU) promptly. Ultrasound-guided diagnostic paracentesis showed unclotting blood in the peritoneal cavity. Enhanced-CT revealed liver mass rupture combined with large amount free fluid in the peritoneum cavity. The patient, with a Child-Pugh score ascending to C13 and a MELD score ascending to 13, underwent TAE urgently timely. Unfortunately, his liver and kidney failures emerged despite his consciousness recovered less than 6 hours after CPR. Emergent laparotomy (tumor biopsy and packing dressing installed) performed 12 hours after TAE because blood pressure and Hb dropped again, which were considered as an indication for surgery by some surgeons. A hepatic tumor located at surface of hepatic segment V was found ruptured and kept mild bleeding during operation. Second-look operation was performed in order to remove the packing 3 days after first operation. Unfortunately, the patient died of MOSF and potential of cerebral bleeding 12 days later after the relaparotomy despite of efforts applied.

## Discussion

As we all known, HCC in China is closely associated with hepatitis B-related liver cirrhosis. The spontaneous rupture of HCC with the incidence of 7~11.2% push the patients into the risk of life-threatening (32~67%) [1]. Risk factors, which increased the rate of mortality, are dependently associated with a higher Child-Pugh score and/or a higher MELD score. The causes of HCC rupture are still unclear despite various hypothesis including venous hypertension has been proposed. CTM in HCC therapy emphasizes on removing the nodule(s) via the effects of promoting regional qi, blood circulation. However, negative-effects of herbs may also induce mass necrosis or bleeding or rupture based on lessons learning from this case. As a result, it's not easy to identify the bound-point of what time for surgery particularly for the special type of liver bleeding such as occult bleeding under liver capsule because of similar symptoms may confuse surgeons' judgment-making below.

- No medical history of HCC and negative AFP.
- No adequate evidence of blood lost in the early stage of bleeding under the liver capsule.
- Obvious sever infectious clues including elevated leukocyte counts and presentations of SIRS at the onset of initial presentations.
- Tumor nodule located proximal to gallbladder led to diagnosis mistaken as cholecystitis.

In practice, a sense of increasing abdominal distension combined unstable hemodynamic may be an important alert signal to predict the upcoming tumor rupture. To the best of our knowledge, there are no direct correlations between tumor size and severity of hemoperitoneum [2]. According to the guidance of HCC stage of AJCC and CNN, bleeding and rupture of HCC have a deep impact on the liver function and kidney function. It is necessary to actively re-evaluate the patient's condition by Child-Pugh score and MELD score in real-time until the proper strategy is proposed. For HCC with good liver function (Child-Pugh A-B7), liver resection including tumor or tumor radio frequency ablation is recommended [3]. Otherwise, non-surgical management including arterial embolization confirms to be more effective and safer in patients with an unresectable tumor or unsuitable for surgery to control or worsening functional hepatic reserve or advanced liver disease etc [1,3]. Although the patient lost his life, in the end, the lessons left more to learn partly because of excessive active surgical intervention or the optimized surgical time

lost. Foremost, the sensitivity of urgent portable sonography and CT scan of abdomen still kept low sensitivity (13%) to judge whether the hepatic nodule rupture or not [3]. Therefore, when an unknown or unclear hepatic tumor nodule is found in routine ultrasonography examination, further imaging including enhanced CT scan of the abdomen, liver MRI, and contrast-enhanced ultrasonography are all required [4]. Herbs may induce nodule or tumor necrosis, infection or bleed secondary to necrosis with sudden onset of abdominal distention. Its side-effects should be ignored no longer. Sudden onset of symptoms is not the specific character of HCC rupture. Hemodynamic instability may be an important worrisome factor in suspicious HCC rupture. Wait-to-see or active surgery should be avoided or performed meticulously for the ruptured HCC with the poor Child-Pugh score or advanced MELD. For patients with obvious delayed PT combined hypertension should be in control within the normal range of blood pressure because of the potential risk of spontaneous cerebral bleeding. What time for surgery remains controversial according to different expertise. In general, Child-Pugh score (>7) or Model of End Liver Disease (MELD) score (>11) for the patient with liver bleeding, therapy with transcatheter arterial embolization (TAE) may be safer compared to surgery.

Based on Jia et al' [5] recommendation two-thirds of evidence emerged simultaneously may be the right timing for surgical intervention [6].

- Clinical presentations worsening.
- Twisted shape of liver or ballooned capsule of liver based on evidence of CT imaging or ultrasonography.
- Unstable hemodynamic circulation or descending hemoglobin.

## Conclusion

A rationalized therapeutic strategy for this upcoming rupture of the liver true capsule should be taken into consideration first rather than so-called perfect but sometimes useless surgical skills or apparent active surgery. Raising the awareness of the special type of liver bleeding and negative effects of herbs will be favorable for both of surgeons and patients.

## References

1. Rombolà F, Caravetta A, Mollo F, Spinoso A, Peluso L, Guarino R. risk of bleeding and spontaneous rupture of hepatocellular carcinoma. A clinical case. *Acta medica*. 2011; 54(4):177-179.
2. Bassi N, Caratozzolo, Bonariol L, Ruffolo C, Bridda A, et al. Management of ruptured hepatocellular carcinoma. Implications for therapy. *World J Gastroenterol*. 2010 Mar; 16(10):1221-225.
3. Lugito NP, Kurniawan A, Yarnunradhani R, Rachman A. Hemoperitoneum caused by spontaneous rupture of hepatocellular carcinoma. *Indones J Intern Med*. 2015 Jan; 47(1):56-60.
4. EASL. Clinical practice guidelines on the management of benign liver tumours. *J Hepatol*. 2016 Aug; 65(2):386-98.
5. Jia Z, Li ZT, kong SY, Zhou Y. Bleeding under Liver Capsula---What Time to Surgery ? *J Trauma Treat*. 2016 Dec; 5(5):349.
6. Luo MY, Jia Z, Cai Y, Wan YF. Bleeding from the Liver Capsule – When to Perform Surgery. *Chin Med J*. 2017 Apr; 130(8): 1008.